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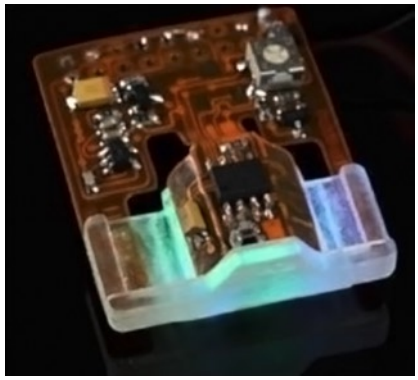
Comparison of biomarkers in AKI

The development of biomarkers for acute kidney injury has attracted the attention of many research and clinical nephrologists. In an article in this issue, Rouse *et al.* from the US Food and Drug Administration present their data from a comprehensive analysis of the performance of commercially available biomarkers in a model of gentamicin toxicity in rats. The tested biomarkers increased in the first 3 days, peaked at day 7, and returned to control levels by day 10. Some of the biomarkers correlated best with histological injury, and some correlated also with recovery. Thus, depending on what was examined (injury, histology recovery, apoptosis, etc.), the biomarkers behaved with different effectiveness. **See page 1186.**

A new device for measuring glomerular filtration rate in freely moving animals

Nothing rivals the measurement of glomerular filtration rate (GFR) in nephrology. This measurement is central to every discipline in the field, and the available methods require collection of urine to obtain accurate results. In their paper, Schock-Kusch *et al.* present a new method



whereby transcutaneous observation following an intravenous injection can give an accurate measure of GFR. They injected a fluorescent marker, fluorescein isothiocyanate-labeled sinistrin, and then followed its disappearance kinetics with a low-cost fluorescence sensor useful in small-animal studies. Radio-frequency transmission allowed the use of remote monitoring. The results were excellent with nephrectomy. The authors compared the performance of this method with that of enzymatic measurements of plasma samples, with good agreement. The advantage of this method is that it can be used in freely moving animals. **See page 1254.**

Recruitment of dendritic cells in lupus nephritis

The surface of plasmacytoid dendritic cells expresses high levels of the chemotactic receptors ChemR23 and CXCR4 and releases type 1 interferon. These cells infiltrate tissues during autoimmune disease such as lupus nephritis. Chemerin is the recently identified natural ligand for ChemR23. De Palma *et al.* found that kidney biopsies from patients with severe lupus nephritis contain ChemR23-expressing dendritic cells in their tubulointerstitial space. Further, their research showed that the tubular epithelial cells expressed chemerin in the biopsies; similarly, lymphatic endothelial cells also expressed chemerin. In tubular epithelial cells *in vitro*, tumor necrosis factor-α stimulated chemerin production, which allowed transmigration of dendritic cells across an endothelial barrier, an effect blocked by an antibody to ChemR23. Thus, the chemerin/ChemR23 pathway represents a new mechanism for recruitment of dendritic cells to the kidneys of patients with lupus nephritis. **See page 1228.**